

ABSTRACT

A semiconductor device in accordance with one example of the present invention pertains to a semiconductor device to be used for a CMOS inverter circuit, comprising a BOX layer 2 formed on a silicon substrate 1, a SOI film 3 comprising single crystal Si formed on the BOX layer, a gate oxide film 4 formed on the SOI film 3, a gate electrode 5 formed on the gate oxide film, and diffusion layers 7, 8 for source/drain regions formed in source/drain regions of the SOI film 3, wherein, when a power supply voltage of 0.6 V is used, a thickness T_{SOI} of the SOI film 3 is $0.084 \mu\text{m}$ or greater and $0.094 \mu\text{m}$ or smaller, and an impurity concentration of the SOI film is $7.95 \times 10^{17}/\text{cm}^3$ or greater and $8.05 \times 10^{17}/\text{cm}^3$ or smaller.